WHAT IS CLAIMED

1. A method for correcting a color image comprising:

averaging at least two color channels in regions near the minimum of histograms of

5   the at least two color channels;

selecting the smallest of the average color values as a black point;

averaging at least two color channels in regions near the maximum of the histograms

of the at least two color channels and selecting the largest of the average color values as a

white point;

10   correcting the at least two color channels by adjusting the smallest and the largest

color averages to the respectively match the values of the black point and white point to

form corrected image data.

2. The method of claim 1 wherein correcting is done with an imposed clipping limit

15   on the histogram.

3. The method of claim 2 wherein the clipping limit is imposed on each of the at least

two colors so that no more than a predetermined percentage of pixels are identified as

black or white pixels.

20

4. The method of claim 1 wherein regions of the histogram near the minimum color

values of histograms for at least two colors are selected based on the darkest non-

black pixels in the histogram of the image.

25   5. The method of claim 1 wherein regions of the histogram near the maximum color

values of histograms for at least two colors are selected based on the lightest non-white

pixels in the histogram of the image.

6. The method of claim 1 wherein an original position and a final position of

30   smallest color averages and an original and final position of largest color averages

17

define two points through which a linear interpolation is used to create a look-up table for correcting color data.

7. The method of claim 6 where conceptual movement of smallest color averages in the histogram is equal to the smaller of that required to achieve alignment with a black point and that required to achieve a predetermined level of clipping and conceptual movement of largest color averages is equal to the smaller of that required to achieve alignment with a white point and that required to achieve a predetermined level of clipping.

8. The method of claim 6 wherein smallest color averages are aligned with the black point and largest color averages are aligned with the white point and the white and black points are conceptually moved towards each other, maintaining the alignment until clipping of all colors is reduced to no more than a predetermined amount.

9. The method of claim 1 wherein after adjustment of colors, resulting brightness distribution is replaced by the original image distribution of the image.

10. The method of claim 3 wherein after adjustment of color, resulting brightness distribution is replaced by the original image brightness distribution.

11. The method of claim 7 wherein after adjustment of colors, resulting brightness distribution is replaced by the original image distribution of the image.

12. The method of claim 8 wherein after adjustment of colors, resulting brightness distribution is replaced by the original image distribution of the image.

13. The method of claim 9 wherein brightness is computed in a color space in which the brightness approximately matches human perception.

14. The method of claim 10 wherein brightness is computed in a color space in which the brightness approximately matches human perception.

15. The method of claim 11 wherein brightness is computed in a color space in which the brightness approximately matches human perception.

16. The method of claim 1 wherein after color adjustment, a selected illuminant color temperature correction is applied to digital image data of the color image.

17. The method of claim 3 wherein after color adjustment, a selected illuminant color temperature correction is applied to digital image data of the color image.

18. The method of claim 7 wherein after color adjustment, a selected illuminant color temperature correction is applied to digital image data of the color image.

19. The method of claim 8 wherein after color adjustment, a selected illuminant color temperature correction is applied to digital image data of the color image.

20. The method of claim 9 wherein after color adjustment, a selected illuminant color temperature correction is applied to digital image data of the color image.

21. The method of claim 1 wherein at least three color channels are averaged in regions near the minimum and the maximum color values of histograms of the at least three color channels.

22. The method of claim 21 wherein averages of maximum values and averages of minimum values for all three colors are compared.

23. The method of claim 22 wherein the largest of the average maximum values of color histograms determines the amount of conceptual movement of the average maximum values for all colors towards the white point.

24. The method of claim 22 wherein the smallest of the average minimum values of color histograms determines the amount of conceptual movement of the average minimum values for all colors towards the black point.

25. The method of claim 1 wherein a separate look-up table of color temperatures in a three dimensional color space is provided, and temperature corrections for images are identified, and temperature corrections are added to the corrected image data.

26. The method of claim 22 wherein a separate look-up table of color temperatures in an at least two-dimensional color space is provided, and temperature corrections for images are identified, and temperature corrections are added to the corrected image data.

27. The method of claim 9 wherein brightness is computed according to a linear combination of red, green and blue data.

28. The method of claim 10 wherein brightness is computed according to a linear combination of red, green and blue data.

29. The method of claim 11 wherein brightness is computed according to a linear combination of red, green and blue data.